F88 CAN Datastream
(Default Settings)
2008-04-03
**CAN Datastream Template**

The F88 now allows the calibration engineer to configure a can datastream with flexible identifiers, transmission rates and content.

The datastream is always CAN2.0B using 11 bit identifiers at 1MHz. Data frames are always 8 bytes, consisting of four 16-bit quantities sent high byte first.

Up to 20 different frames can be defined. Each frame has configurable CAN identifier, transmission rate (up to 100Hz) and four transmitted quantities (selectable from all monitorable/loggable items within the ecu). Item names with suffix _S are signed, those with suffix _U are unsigned.

### Default Settings

The default datastream defines 18 of the possible 20 frames. Identifiers are 600h through 611h to compliment those sent by the PDU (700h through 709h). Transmission frequencies vary from 5Hz to 50Hz.

<table>
<thead>
<tr>
<th>Frame 1 / 600h / 50Hz</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>rpm _S</td>
<td>rpm</td>
<td>no transform</td>
</tr>
<tr>
<td>ppsA _S</td>
<td>%</td>
<td>divide by 81.92</td>
</tr>
<tr>
<td>vbat _S</td>
<td>V</td>
<td>divide by 1000</td>
</tr>
<tr>
<td>longG _S</td>
<td>G</td>
<td>divide by 1000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame 2 / 601h / 50Hz</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>map1 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>prp1 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>turboSpeed1DeSpiked _S</td>
<td>kRpm</td>
<td>divide by 100</td>
</tr>
<tr>
<td>SPARE_U</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame 3 / 602h / 50Hz</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>map2 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>prp2 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>turboSpeed2DeSpiked _S</td>
<td>kRpm</td>
<td>divide by 100</td>
</tr>
<tr>
<td>SPARE_U</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame 4 / 603h / 10Hz</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>relFp1 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>lam1 _S</td>
<td>lambda</td>
<td>divide by 1000</td>
</tr>
<tr>
<td>fuelMltCl1 _S</td>
<td>-</td>
<td>divide by 4096</td>
</tr>
<tr>
<td>SPARE_U</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame 5 / 604h / 10Hz</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>relFp2 _S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
<tr>
<td>lam2 _S</td>
<td>lambda</td>
<td>divide by 1000</td>
</tr>
<tr>
<td>fuelMltCl2 _S</td>
<td>-</td>
<td>divide by 4096</td>
</tr>
<tr>
<td>SPARE_U</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Frame 6 / 605h / 5Hz
act1_S degC divide by 10
ect1_S degC divide by 10
egt1_S degC divide by 10
SPARE_U - -

Frame 7 / 606h / 5Hz
act2_S degC divide by 10
ect2_S degC divide by 10
egt2_S degC divide by 10
SPARE_U - -

Frame 8 / 607h / 10Hz
ccp1_S mBar no transform
ccp2_S mBar no transform
ccp3_S mBar no transform
ccp4_S mBar no transform

Frame 9 / 608h / 10Hz
eop1_S mBar no transform
eop2_S mBar no transform
eop3_S mBar no transform
eop4_S mBar no transform

Frame 10 / 609h / 5Hz
eot_S degC divide by 10
ft_S degC divide by 10
ecp_S mBar no transform
bap_S mBar no transform

Frame 11 / 60Ah / 5Hz
gineEnable_U - 0=OK 1=SWOFF 100=EOPTRIP 101=CCPTRIP
calSwitch_U - add 1
tcSwitch_U - add 1
pitSwitch_U - 0=OFF 1=ON

Frame 12 / 60Bh / 5Hz
clutchSwitch_U - 0=OFF 1=ON
manAutoSwitch_U - 0=MANUAL 1=AUTO
wow_U - 0=OFF 1=ON
autoStartState_U - 0=OFF 1=ENA 2=ARMED 3=START 4=FAIL
### Frame 13 / 60Ch / 5Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuelConsLR_U</td>
<td>Litres</td>
<td>divide by 10</td>
</tr>
<tr>
<td>sensorSwitch_U</td>
<td></td>
<td>0 = OFF 1 = ON</td>
</tr>
<tr>
<td>alsState_U</td>
<td></td>
<td>0 = OFF 1 = START 2 = ON 3,4 = SD 5 = TO 100 = DIS</td>
</tr>
<tr>
<td>wgcStrategyActive_U</td>
<td></td>
<td>0 = OLD 1 = NEW 2 = STD</td>
</tr>
</tbody>
</table>

### Frame 14 / 60Dh / 5Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>gearCutDogKickCount_U</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>gearCutFailCount_U</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>dbwStatus_U</td>
<td>(bit flags)</td>
<td>B0 = PPS B1 = TPS1 B2 = TPS2 B3 = DBW1 B4 = DBW2</td>
</tr>
<tr>
<td>knockStatus_U</td>
<td>(bit flags)</td>
<td>B0 = cyl1 B1 = cyl2 etc</td>
</tr>
</tbody>
</table>

### Frame 15 / 60Eh / 50Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>V</th>
<th>divide by 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>gearV_U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gear_S</td>
<td>0 = U 1 = R 2 = N 3 = 1 4 = 2 5 = 3 6 = 4 7 = 5 8 = 6 9 = 7 10 = 8</td>
<td></td>
</tr>
<tr>
<td>paddleSwitch_U</td>
<td>0 = NONE 1 = DOWN 2 = UP 3 = BOTH</td>
<td></td>
</tr>
<tr>
<td>gsp_S</td>
<td>mBar</td>
<td>no transform</td>
</tr>
</tbody>
</table>

### Frame 16 / 60Fh / 50Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>kph</th>
<th>multiply by 0.036</th>
</tr>
</thead>
<tbody>
<tr>
<td>flSpeed_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>frSpeed_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rlSpeed_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rrSpeed_S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Frame 17 / 610h / 50Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>deg</th>
<th>divide by 32</th>
</tr>
</thead>
<tbody>
<tr>
<td>swa_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>latG_S</td>
<td>G</td>
<td>divide by 1000</td>
</tr>
<tr>
<td>vehicleSpeed_S</td>
<td>kph</td>
<td>multiply by 0.036</td>
</tr>
<tr>
<td>drivenSpeed_S</td>
<td>kph</td>
<td>multiply by 0.036</td>
</tr>
</tbody>
</table>

### Frame 18 / 611h / 50Hz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>%</th>
<th>divide by 10.24</th>
</tr>
</thead>
<tbody>
<tr>
<td>wheelSpin_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tcSpinTarg_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tcSpinErr_S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tcTrq_S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Abbreviations

- **rpm**: Engine Speed
- **ppsA**: Pedal Position
- **vbat**: Supply (Battery) Voltage
- **longG**: Longitudinal G
- **map1/map2**: Manifold Absolute Pressure
- **prp1/prp2**: Post-Restricter Pressure
- **turboSpeed1DeSpiked/turboSpeed1DeSpiked**: Turbocharger Shaft Speed
relFp1/relFp2 Relative Fuel Pressure
lam1/lam2 Fuel Air Ratio (Lambda)
fuelMltCll1/fuelMltCll2 Fuel Correction for Closed-Loop Lambda
act1/act2 Air Charge Temperature
ect1/ect2 Engine Coolant Temperature
egt1/egt2 Exhaust Gas Temperature
ccp1/ccp2/ccp3/ccp4 Crank Case Pressure
eop1/eop2/eop3/eop4 Engine Oil Pressure
eot Engine Oil Temperature
ft Fuel Temperature
ecp Engine Coolant Pressure
bap Barometric Absolute Pressure
ingineEnable Overall Engine Enable Status
calSwitch Calibration Switch Position
tcSwitch Traction Control Switch Position
pitSwitch Pit Limit Switch Position
clutchSwitch Clutch Depressed Switch Position
manAutoSwitch Manual / Auto Gearshift Switch Position
wow Weight On Wheels
autoStartState Automatic Engine Starting System State
fuelConsLR Low Resolution Fuel Consumption
sensorSwitch Redundant Sensor Set Preference Switch Position
alsState Anti Lag System State
wgcStrategyActive Active Wastegate Strategy
gearCutDogKickCount Count of Closed-Loop Gearcut Kicks
gearCutFailCount Count of Closed-Loop Gearcut Failures
dbwStatus Drive By Wire System Status
knockStatus Knock Detection Sensor Status
gearV Gear Position Sensor Voltage
gear Gear Position
paddleSwitch Paddle Shift Switches Position
gsp Gearshift System Pressure
flSpeed Front Left Wheel Speed
frSpeed Front Right Wheel Speed
rlSpeed Rear Left Wheel Speed
rrSpeed Rear Right Wheel Speed
swa Steering Wheel Angle
latG Lateral G
vehicleSpeed Vehicle Speed
drivenSpeed Driven Wheel Speed
wheelSpin Wheel Spin
tcSpinTarg Traction Control Wheel Spin Limit
tcSpinErr Traction Control Wheel Spin Error
tcTrq Traction Control Torque Control Request